Claim Amendments

1. (currently amended) A method, comprising the steps of:

introducing a plurality of voids into a polymeric material, wherein the plurality of voids are contained within a plurality of hollow compressible microballoons having a thin polymer wall that encloses a gas and wherein the plurality of voids fill up to twenty-five percent of a total volume of the polymeric material, and the introduction of the plurality of voids into the polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Young's modulus of the polymeric material;

buffering one or more sensor fibers having one or more stress sensitive components in abutment with a portion of the polymeric material from one or more stresses through employment of the portion of the polymeric material that comprises one or more voids of the plurality of voids~~; and~~, said buffering further comprising the steps of:

forming a pressure-sensitive foam tape from the polymeric material with the plurality of voids;

applying a portion of the pressure-sensitive foam tape to the one or more stress sensitive components; and

encapsulating the portion of the pressure-sensitive foam tape and the one or more stress sensitive components with a potting compound;

accommodating a movement of the portion of the polymeric material through compression of one or more of the one or more voids by means of compression of the gas in the hollow microballoons through a partial collapse of the thin polymer wall;

wherein movement of a portion of the polymeric material is accommodated through compression of at least one of the voids, wherein the polymeric material with the voids has a lower Poisson's ratio than the polymeric material without voids, and wherein, since the voids do

not substantially alter the Young's modulus of the solid material, a decrease in the Poisson's ratio results in a decrease in the bulk modulus of the polymeric material.

2. (original) The method of claim1, wherein the step of introducing the plurality of voids into the polymeric material comprises the steps of:

adding the plurality of voids into a resin of the polymeric material; and

curing the plurality of voids and the resin to create a potting compound that comprises the plurality of voids.

3. (original) The method of claim 2, further comprising the steps of:

encapsulating one or more of the one or more stress sensitive components in the potting compound; and

accommodating an expansion of the one or more stress sensitive components through compression of the one or more of the one or more voids.

4. (cancelled)

5. (cancelled)

6. (previously amended) The method of claim 1, wherein the step of adding the plurality of hollow compressible microballoons to the polymeric material comprises the steps of:

employing a coupling agent to promote an adhesion between the plurality of hollow compressible microballoons and the polymeric material; and

employing the coupling agent to promote a decrease in a settling rate of the plurality of hollow compressible microballoons in the polymeric material.

7. (cancelled)

8. (cancelled)

9. (cancelled)

10. (cancelled)

11. (cancelled)

12. (cancelled)

13. (cancelled)

14. (cancelled)

15. (original) The method of claim 1, wherein the step of accommodating the movement of the portion of the polymeric material through compression of the one or more of the one or more voids comprises the step of:

allowing compression of the one or more of the one or more voids in response to an applied force to promote a decrease in a response force from the portion of the polymeric material to one or more of the one or more stress sensitive components.

16. (cancelled)

17. (cancelled)

18. (cancelled)

19. (cancelled)

20. (cancelled)

21. (cancelled)

22. (currently amended) The method of claim ~~21~~ 28, wherein the first coil portion comprises a first layer of the fiber optic sensing coil, and wherein the second coil portion comprises a second layer of the fiber optic sensing coil; and

wherein the step of locating one or more of the plurality or introduced voids between the first coil portion and the second coil portion comprises the step of:

locating one or more of the plurality of the introduced voids between the first layer and the second layer.

23. (currently amended) The method of claim ~~21~~ 28, wherein the fiber optic sensing coil comprises a layer of a plurality of optical fiber windings, and wherein the first coil portion comprises a first optical fiber winding of the plurality of optical fiber windings, and wherein the second coil portion comprises a second optical fiber winding of the plurality of optical fiber windings; and

wherein the step of locating one or more of the plurality of introduced voids between the first coil portion and the second coil portion comprises the step of:

locating one or more of the plurality of introduced voids between the first winding and the second winding.

24. (previously presented) The method of claim 2, wherein the step of adding the plurality of voids into the resin of the polymeric material further comprises the step of adding the plurality of voids into the resin of the polymeric material in a substantially uniform distribution.

25. (previously presented) The method of claim 1, wherein the plurality of voids comprise a diameter that is smaller than a distance of separation between adjacent portions of the one or more sensor fibers.

26. (previously presented) The method of claim 25, wherein the diameter of each of the plurality of voids is less than fifty micrometers.

27. (previously presented) The method of claim 1, wherein the plurality of voids fill ten percent of the total volume of the polymeric material.

28. (new) A method, comprising the steps of:

introducing a plurality of voids into a polymeric material, wherein the plurality of voids are contained within a plurality of hollow compressible microballoons having a thin polymer wall that encloses a gas and wherein the plurality of voids fill up to twenty-five percent of a total volume of the polymeric material, and the introduction of the plurality of voids into the

polymeric material effects a decrease in a bulk modulus of the polymeric material without substantially altering a Young's modulus of the polymeric material;

buffering one or more sensor fibers having one or more stress sensitive components in abutment with a portion of the polymeric material from one or more stresses through employment of the portion of the polymeric material that comprises one or more voids of the plurality of voids, said buffering further comprising the steps of:

encapsulating a fiber optic sensing coil within the polymeric material that comprises the plurality of voids, wherein the fiber optic sensing coil comprises a first coil portion and a second coil portion, and wherein the first coil portion is adjacent to the second coil portion; and

locating one or more of the plurality of introduced voids between the first coil portion and the second coil portion;

accommodating a movement of the portion of the polymeric material through compression of one or more of the one or more voids by means of compression of the gas in the hollow microballoons through a partial collapse of the thin polymer wall;

wherein movement of a portion of the polymeric material is accommodated through compression of at least one of the voids, wherein the polymeric material with the voids has a lower Poisson's ratio than the polymeric material without voids, and wherein, since the voids do not substantially alter the Young's modulus of the solid material, a decrease in the Poisson's ratio results in a decrease in the bulk modulus of the polymeric material.

29. (new) The method of claim 28, wherein the step of introducing the plurality of voids into the polymeric material comprises the steps of:

adding the plurality of voids into a resin of the polymeric material; and

curing the plurality of voids and the resin to create a potting compound that comprises the plurality of voids.

30. (new) The method of claim 29, further comprising the steps of:

encapsulating one or more of the one or more stress sensitive components in the potting compound; and

accommodating an expansion of the one or more stress sensitive components through compression of the one or more of the one or more voids.

31. (new) The method of claim 29, wherein the step of adding the plurality of voids into the resin of the polymeric material further comprises the step of adding the plurality of voids into the resin of the polymeric material in a substantially uniform distribution.

32. (new) The method of claim 28, wherein the step of adding the plurality of hollow compressible microballoons to the polymeric material comprises the steps of:

employing a coupling agent to promote an adhesion between the plurality of hollow compressible microballoons and the polymeric material; and

employing the coupling agent to promote a decrease in a settling rate of the plurality of hollow compressible microballoons in the polymeric material.

33. (new) The method of claim 28, wherein the step of accommodating the movement of the portion of the polymeric material through compression of the one or more of the one or more voids comprises the step of:

allowing compression of the one or more of the one or more voids in response to an applied force to promote a decrease in a response force from the portion of the polymeric material to one or more of the one or more stress sensitive components.

34. (new) The method of claim 28, wherein the plurality of voids comprise a diameter that is smaller than a distance of separation between adjacent portions of the one or more sensor fibers.

35. (new) The method of claim 34, wherein the diameter of each of the plurality of voids is less than fifty micrometers.

36. (new) The method of claim 28, wherein the plurality of voids fill ten percent of the total volume of the polymeric material.